

Lesson 8-9

Benchmark II: mBot's Gifts

 Overview

This lesson is a reflective learning activity to summarize the previous lessons. Students will imagine their story context of the Robot Society and then create a simple animation to deliver their ideas. In connection to the story context of Lesson 4 that an mBot delegation was sent to the Robot Society and held the first meeting with robot citizens there. In this lesson, students will imagine and create gifts for the Robot Society to show friendship.

 Objectives

By the end of class, students will be able to...

- Define the sequences of the two (or more) sprites and logically order programming scripts to generate simple animated effects;
- Utilize appropriate looping algorithms to reduce repetitive parts of the program and make it clear and easy to read and write.

 Materials

- mBlock
- mBot
- Lesson 8-9 Activity Sheet
- Lesson 8-9 Slideshow

 Content Standards

Type	Indicator	Standard
ISTE	1d	Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
	3c, 3d	Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
	4a	Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions
	6a, 6d	Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
CSTA	1B-AP-08	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
	1B-AP-13	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.
	1B-IC-18	Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.



Pre-lesson Checklist

- Print out and/or digitally distribute the Lesson 8-9 Activity Sheet.
 - If students will use paper versions of activity sheets, make sure all the resources are easily available for students. This can be done by providing the links on your LMS, etc., or printing the resources out for each group to utilize during the class.
- Make sure any necessary computer equipment is ready to go.
- Familiarize yourself with key points and notes detailed within this lesson plan and the slideshow.



Agenda (2 hours)

Time Interval	Content
15 minutes	Recap • This phase aims to review what has been learned in the previous lesson quickly. Students need to explain the basic concepts in their own words.
45 minutes	Challenge • In this phase, students need to prepare gifts for the Robot Society. For example, they can imagine and make the gift sprites in mBlock or compose a song to express their kindness.
50 minutes	Share • This phase is to share, peer-review, and reflect upon the tentative animation. Students will hold a gift fair and comment on each other's work.
10 minutes	Clean Up

Activities

Recap: Slides 2-6 [15 minutes]

Objectives:

- This phase aims to review what has been learned in the previous lesson quickly. Students need to explain the basic concepts in their own words.

Procedures:

Slide 3

- Review the two learned control constructs – sequencing and repetition:
 - “Sequencing is a set of ordered steps for accomplishing a task.”*
 - “The sequential construct is the very basic structure of a program.”*
 - “If we want the computer or machine to carry out an assigned task, the instructions should be placed logically and be defined in a precise way.”*

Slide 4

- Review the coding blocks that can generate interactive effects:
 - This slide aims to recap the Looks blocks which are used at the very beginning of this course.
 - Have students recall and report the functions of Looks blocks they know and use.

Slide 5

- Recap the Motion blocks which can control the sprites' movement.
 - Have students recall and report the functions of Looks blocks they know and use.
 - In particular, have students differentiate again the “go to X/Y” and “glide (...) secs to X/Y” blocks and explain the different effects while using these two blocks.

Slide 6

- Recap the Sound blocks as well as the use of the Sound Library.
 - Have students recall and report the functions of Sound blocks they know and use.
 - Remind students that they can either use the built-in sound effects in the Sound Library or record and use their own voice message in the “My Sounds” panel.

Challenge: Slides 7-14 [45 minutes]

Objectives:

- In this phase, students need to prepare gifts for the Robot Society. For example, they can imagine and make the gift sprites in mBlock or compose a song to express their kindness.

Procedures:

Slide 8

- Have students recall the story context in Lesson 4 and then talk about the first meeting between mBot and robot citizens.
 - Students can open and revive their projects completed in Lesson 4. Showcase and report what mBot and the robot(s) discuss in the meeting.
 - Pose a question for discussion:
 - “What should mBot the Representative do after greeting to the robot citizens?”*
 - Have students discuss what they will do if you are paying a visit to their new neighbor(s).

Slide 9

- Show Slide 9 to suggest that mBot could bring a special gift to the future Robot Society:
 - Ask students to think of the following questions:
 - *“What kinds of gifts do you think the robot would like? Why?”*
 - *“How could your gifts be special?”*

Slides 10-11

- Before students start to design their gift projects, ask students to associate their real-life experience with the situation that they receive a gift from others.
 - *“What did your birthday presents look like?”*
 - *“What did your Christmas presents look like?”*

Slides 12-13

- Remind students that they can also compose a song attached to their gifts.
 - Students can use Sound blocks to create the piece.
 - However, if they want to record a voice message to say and express something, encourage them to do so.
- Instruct students to create the gifts through the sprites in mBlock (i.e. creating computing artifacts) or mBot (i.e. creating the gift through physical artifacts):
 - *“Discuss with your partner(s) and doodle the draft of the design.”*
 - *“Design the stage by adding relevant character sprites and backdrops.”*
 - *“Program the elements you used in the stage – remember to utilize the computing knowledge and skills you have learned in the previous lessons.”*

Slide 14

- Remind students that when they complete the gifts, remember to write down their words to the Robot Society and its citizens in the Gift Card in the activity sheet.
 - Students can cut off the Gift Card from the activity sheet. Students can place the Gift Card alongside with their projects.
 - Moreover, students can also design a poster to illustrate their creation.

Share: Slides 15-18

[50 minutes]

Objectives:

- This phase is to share, peer-review, and reflect upon the tentative animation. Students will hold a gift fair and comment on each other's work.

Procedures:**Slide 16**

- In the Share section, instruct students to organize a gift fair in the classroom. Everyone can present and recommend their gifts to each other, and if anyone likes the project, they can order the gift for the mBot Delegation.
 - Students will need a reasonably spacious playing area to hold the gift fair.
 - Depend on your activity time, you and your students can decide whether to decorate the room or not for the gift fair.
 - Students can invite other peers to experience their gifts and comment on the work. If they like the work, ask the guest(s) whether to order the gift(s) or not.
 - Record the “Order” in the activity sheet and calculate how many orders they have received in this gift fair.

**Slide 17**

- Remind the class that they need to save their projects either on the local storage or in mBlock as the project completed in this lesson will be reused in the future activity.

Clean Up
[10 minutes]